

Frontiers of Science Symposium on the HUMAN CELL ATLAS

Organized by the *Indian Academy of Sciences*
in collaboration with the international *Human Cell Atlas* consortium

The Mission of the international Human Cell Atlas (HCA) consortium is to create comprehensive reference maps of all human cells as a basis for both understanding human health and diagnosing, monitoring, and treating disease. The Human Cell Atlas will impact almost every aspect of biology and medicine, ultimately leading to a richer understanding of life's most fundamental units and principles.

A complete Human Cell Atlas would give us a unique ID card for each cell type, a three-dimensional map of how cell types work together to form tissues, knowledge of how all body systems are connected, and insights into how changes in the map underlie health and disease. It would allow us to identify which genes associated with disease are active in our bodies and where, and analyze the regulatory mechanisms that govern the production of different cell types. ***This has been a key challenge in biology for more than 150 years. New tools such as single-cell genomics have put it within reach.*** It is an ambitious but achievable goal, and requires an international community of biologists, clinicians, technologists, physicists, computational scientists, software engineers, and mathematicians.

A White Paper is available for free download:

https://www.humancellatlas.org/wp-content/uploads/2019/11/HCA_WhitePaper_18Oct2017-copyright.pdf